

## Subpart F—Steering Systems

### § 182.600 General.

A self-propelled vessel must comply with the provisions of this subpart.

#### § 182.610 Main steering gear.

(a) A vessel must be provided with a main steering gear that is:

(1) Of adequate strength and capable of steering the vessel at all service speeds;

(2) Designed to operate at maximum astern speed without being damaged or jammed; and

(3) Capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in not more than 28 seconds with the vessel moving ahead at maximum service speed.

(b) Control of the main steering gear, including control of any necessary associated devices (motor, pump, valve, etc.), must be provided from the operating station.

(c) The main steering gear must be designed so that transfer from the main steering gear or control to the auxiliary means of steering required by § 182.620 can be achieved rapidly. Any tools or equipment necessary to make the transfer must be readily available.

(d) The operating station must be arranged to permit the person steering to have the best possible all around vision.

(e) Strong and effective rudder stops must be provided to prevent jamming and damage to the rudder and its fittings. These stops may be structural or internal to the main steering gear.

(f) In addition to meeting the requirements of paragraphs (a) through (e) of this section, a vessel with a power driven main steering gear must be provided with the following:

(1) A disconnect switch located in the steering compartment, and instantaneous short circuit protection for electrical power and control circuits sized and located in accordance with § 58.25–55(d) of this chapter. Overload protection is prohibited;

(2) An independent rudder angle indicator at the operating station;

(3) An arrangement that automatically resumes operation, without reset, when power is restored after a power failure;

(4) A manual means to center and steady the rudder(s) in an emergency; and

(5) A limit switch to stop the steering gear before it reaches the rudder stops required by paragraph (e) of this section.

(g) In addition to meeting the requirements of paragraphs (a) through (f) of this section, a vessel more than 19.8 meters (65 feet) in length with a power driven main steering gear must be provided with the following:

(1) A visual means, located at the operating station, to indicate operation of the power units; and

(2) Instructions for transfer procedures from the main steering gear or control to the auxiliary means of steering required by § 182.620, posted at the location where the transfer is carried out.

[CGD 85–080, 61 FR 986, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

#### § 182.620 Auxiliary means of steering.

(a) Except as provided in paragraph (c) of this section, a vessel must be provided with an auxiliary means of steering that is:

(1) Of adequate strength;

(2) Capable of moving the rudder from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the vessel at one-half its maximum service speed ahead, or 7 knots, whichever is greater; and

(3) Controlled from a location that permits safe maneuvering of the vessel and does not expose the person operating the auxiliary means of steering to personnel hazards during normal or heavy weather operation.

(b) A suitable hand tiller may be acceptable as the auxiliary means of steering where satisfactory to the cognizant OCMI.

(c) An auxiliary means of steering need not be provided if:

(1) The main steering gear and its controls are provided in duplicate;

(2) Multiple screw propulsion, with independent pilothouse control for each screw, is provided, and the vessel is capable of being steered using pilot-house control;

(3) No regular rudder is fitted and steering action is obtained by a change of setting of the propelling unit; or

(4) Where a rudder and hand tiller are the main steering gear.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

### Subpart G—Piping Systems

#### § 182.700 General.

Materials used in piping systems must meet the requirements of this subpart and be otherwise acceptable to the cognizant OCMI.

#### § 182.710 Piping for vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this part the following are vital systems:

- (1) Fuel system;
- (2) Fire main;
- (3) Carbon dioxide, Halon 1301, and clean agent systems;
- (4) Bilge system;
- (5) Steering system;
- (6) Propulsion system and its necessary auxiliaries and controls;
- (7) Ship's service and emergency electrical generation system and its necessary auxiliaries; and
- (8) A marine engineering system identified by the cognizant OCMI as being crucial to the survival of the vessel or to the protection of the personnel on board.

(b) For the purpose of this part, a system not identified in paragraph (a) of this section is a non-vital system.

(c) Piping used in a vital system must:

- (1) Be composed of ferrous materials except when:
  - (i) Nonmetallic piping materials are permitted by § 182.720; or
  - (ii) Nonferrous metallic piping materials are permitted by § 182.730; and
- (2) If subject to a pressure of more than 1,034 kPa (150 psig), be designed, fabricated, and inspected in accordance with the principles of ANSI B 31.1 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008; USCG-2006-24797, 77 FR 33892, June 7, 2012]

#### § 182.715 Piping subject to more than 1,034 kPa (150 psig) in non-vital systems.

Piping subject to more than 1,034 kPa (150 psig) in a non-vital system must be designed, fabricated, and inspected in accordance with the principles of ANSI B 31.1, or other industry standard acceptable to the Commandant.

#### § 182.720 Nonmetallic piping materials.

(a) Rigid nonmetallic materials (plastic) may be used only in non-vital systems and in accordance with paragraphs (c) and (d) of this section.

(b) Flexible nonmetallic materials (hose) may be used in vital and non-vital systems where permitted by paragraph (e) of this section.

(c) Nonmetallic piping must not be used in gasoline or diesel fuel systems. Flexible nonmetallic materials (hose) may be used where permitted by paragraph (e) of this section.

(d) Where rigid nonmetallic material (plastic) is permitted for use in piping systems by this section, the following restrictions apply:

(1) Penetrations of required watertight decks and bulkheads by any rigid plastic pipe are prohibited unless the following requirements are met:

(i) Each penetration must be accomplished using an acceptable metallic through deck or through bulkhead fitting that is welded or otherwise attached to the bulkhead or deck by an accepted method; and

(ii) One or more metallic shutoff valves must be installed adjacent to the fitting in one of the following ways:

(A) Only one metallic shutoff valve must be installed if it is operable from above the bulkhead deck;

(B) If two metallic shutoff valves are installed, one on either side of the bulkhead, they need not be operable from above the bulkhead deck provided immediate access to both is possible; or

(C) Where both plastic and metallic materials are used in piping that penetrates a bulkhead, and the two materials exist entirely on opposite sides of the bulkhead, a metallic shutoff valve must be installed at the bulkhead in the metallic part of the system, with the valve being capable of operation